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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,130	09/07/2001	Toru Nakamura	213151US0PCT	7782

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EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
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1712

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application N . 09/926,130		Applicant(s) NAKAMURA ET AL.	
	Examiner Marc S. Zimmer		Art Unit 1712	

-- Th MAILING DATE of this communication appears on the cov r sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 07 September 2001 .

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1,3,4 and 6 is/are rejected.

7) ☒ Claim(s) 2 and 5 is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some * c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6 .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____

Information Disclosure Statement

Applicant is advised that, according to rule 1.98, when listing co-pending applications Applicant is required to provide those portions of the application that caused the Application to be listed including claims directed to that portion if not the entire disclosure. Applicant has provided copies of only the claims with no statement emphasizing their particular relevance. If the Applicant had only deemed the claims to be relevant than the phrase (claims) should have been reported under the heading "Serial or Patent No.". These documents have not been considered.

Claim Analysis

Applicant discloses a casting film that is, "used for producing a ceramic green sheet". It is notable that the portion of the claim emphasized by the quotation marks is merely directed to the intended use of said film. Section 2112.02 provides direction as to how phrases such as this are to be treated: "If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). See also *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) ("where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation"); *Kropa v. Robie*, 187 F.2d at 152, 88 USPQ2d at

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480-81 (preamble is not a limitation where claim is directed to a product and the preamble merely recites a property inherent in an old product defined by the remainder of the claim). Therefore, Application's mention that the film is employed as a support for manufacturing a ceramic green sheet is not assigned any patentable weight.

In the most general embodiment of the instant invention, the casting film is delineated as having the structure of a substrate film of undefined composition onto which a cured layer of an addition curing silicone has been placed. The addition-curing layer is characterized as containing a photosensitizer. Thereafter, a process of forming the cured polysiloxane layer is outlined hence the entire claim takes the form of a product-by-process claim. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process" *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Significantly, the Applicants have distinguished the instant invention from a casting film that is prepared from an addition-curable composition subjected to elevated temperatures. They have also demonstrated that a film of the instant invention has different properties than an epoxy-functionalized siloxane polymer cured by photo-activated means. However, there is nothing in the Specification distinguishing the product of claims 1-5 from a silicone-coated substrate wherein the silicone is addition (hydrosilylation) curable but is cured by radiative, instead of thermal, energy.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al., EP 238 033 A1. Aoki discloses a composition comprised of (A) an alkenyl group-functionalized polysiloxane adhering to the formula I (page 2, line 39) wherein R denotes a 1 to 12 carbon monovalent hydrocarbon group exemplified by alkenyl groups (page 3, lines 20-22), (B) an organohydrogenpolysiloxane, (C) a platinum hydrosilylation catalyst, and (D) a photosensitizer. According to page 3, lines 10-12, there is a synergistic effect exhibited by components (C) and (D) that permits the crosslinking reaction between the organosilicon materials to proceed quickly upon being exposed to ultraviolet irradiation in a small dose. On page 4, lines 51-55, a number or possible uses for the composition are mentioned including release agents for release papers. On the other hand, the coating density of crosslinkable silicone on a release paper is not expressly disclosed. Nonetheless, Applicant has not attached any criticality to this parameter. Moreover, one of ordinary skill is fully capable of determining as a matter of routine experimentation the amount of material to be applied to a substrate so as to minimize cost while, at the same time, ensuring that there is sufficient material coated onto the substrate so that it may fulfill its intended role. "Discovering an

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optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, U.S. Patent # 4,435,259. Chang discloses an addition-curing composition comprised of a vinyl group-functionalized polysiloxane (column 2, line 17), a polymethylhydrogensiloxane, and a photosensitizer. Notably, the composition is apparently cured in the absence of conventional hydrosilylation catalysts. Applicant is directed to Example 3 where an exemplary composition is coated onto semi-bleached paper and cured under ultraviolet lamps. The coating density is expressed in the reference in terms of lbs-per-ream which cannot be directly correlated with the amount disclosed in claim 1. Nevertheless, as before, Applicant has not attached criticality to this aspect nor would determination of the appropriate coating amount be beyond the capabilities of one having ordinary skill.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al., EP 238 033 A1 or Chang, U.S. Patent # 4,435,259 in view of Sasaki et al., U.S. Patent # 4,603,168. Both Aoki and Chang fail to disclose a two-stage curing process

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entailing first heating the composition at a specified temperature followed by irradiation of said composition under ultraviolet light. Indeed, both references only provide for curing by way of a UV-light promoted mechanism. Sasaki, on the other hand, teaches a polysiloxane composition of very similar constitution that is cured in two stages wherein one stage entails heating the composition to between 50° and 100° C and the other involves exposing the same to an ultraviolet radiation source. The order in which these operations are carried out is not important according to column 4, lines 10-19 except when the composition has previously been dissolved in a diluent. (In these instances, the composition should be heated first to evaporate the solvent while partially curing the polymer materials.)

Sasaki explains in column 1, lines 24-39 that methods relying upon ultraviolet light to induce curing are burdened by, among other considerations, slow cures and non-uniform curing in interior sections. Thermal curing methods, likewise, suffer from long curing periods (column 1, lines 18-23). It is for this reason that Sasaki advocates performing the cure in successive stages wherein in one stage, the polymer is subjected to elevated temperatures and, in a second stage, to ultraviolet radiation. Given the teachings of Sasaki, it would have been obvious to one of ordinary skill to employ a two stage cure utilizing the aforementioned techniques to ensure uniform curing throughout the matrix.

As an aside, it is noted that *Sasaki et al.*, anticipates the instant invention in virtually every respect but teaches away from a coating amount corresponding to 0.01 to 0.2 g/m². They teach a dual cure silicone coating composition comprised of (i) a

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polysiloxane bearing at least two alkenyl groups including vinyl, propenyl, and butenyl, (ii) an organohydrogenpolysiloxane, (iii) a chloroplatinic acid derivative, (iv) a hydrosilylation reaction retarding agent, and (v) a photosensitizer. The substrates onto which the above compositions are coated in the Examples are largely polymer films including polyolefin films and polyester films though no mention is made of polyethylene terephthalate in particular. Of course, this reference was invoked strictly because it teaches the merits of a two-stage cure.

Allowable Subject Matter

Claims 2, and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Neither of the above references contemplates that two distinct alkene-functionalized polymers in admixture is desired as the base material. There is also no indication of a two-stage cure employing a different driving force in each stage as the process of claim 6 mandates hence claim 6 is allowable.

The following documents of cited as being of interest for their resemblance to the instant invention:

Oxman, U.S. Patent # 6,376,569 and many of the references cited therein, disclose UV curable hydrosilylation reactions between an alkenyl group-substituted polysiloxane and a polysiloxane containing hydrosilyl groups. However, in these references, the framework of the catalyst is designed to be activated by the radiation source in the absence of a photosensitizer. Boardman, U.S. Patent # 4,916,169 also

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teaches a hydrosilylation catalyst that is activated by ultraviolet light but may be tuned by the inclusion of a photosensitizer to catalyze hydrosilylations when exposed to less energetic visible light.

Sumi et al., U.S. Patent # 6,057,041 teaches a polyester release film that exploits a polyester base having dimensional stability and, hence, is unaffected by the temperatures necessary to cure addition-curable silicones.

Cavezzan teaches yet another UV-curable polysiloxane composition. In this case, the UV-activated component is an inhibitor that is converted to a non-inhibiting product when exposed to ultraviolet radiation as opposed to a photosensitizer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 703-605-1176. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

October 17, 2002



Robert Dawson
Supervisory Patent Examiner
Technology Center 1700

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